Applicant: William Harold Jay

Attorney's Docket No.: 11750-002001 /
Serial No.: 09/509,301

2274032/PO9462/97-MJC

Serial No.: 09/509,301 Filed: March 23, 2000

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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

- 1. (Currently Amended) An ion exchange material comprising a water superabsorbent polyurethane foam having an ion exchange medium contained therein, wherein the foam includes a polyurethane that contains poly(oxyethylene) moieties having a molecular weight of 1,000-1,400.
- 2. (Previously Presented) An ion exchange material according to claim 1 wherein the ion exchange medium is selected for sorbing metal ions from a solution and/or slurry.
- 3. (Previously Presented) An ion exchange material according to claim 1 wherein the ion exchange medium is in the form of a bead, resin, fibre, foam, or liquid.
- 4. (Currently Amended) An ion exchange material according to claim 1 wherein the ion exchange medium is in liquid form and is imbibed into a solid sorbent for embedding into the superabsorbent polyurethane foam.
- 5. (Currently Amended) An ion exchange material according to claim 1 wherein the ion exchange medium is in the form of an emulsion or suspension for imbibing into the superabsorbent polyurethane.

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6. (Currently Amended) A process for the extraction of metal anions and cations from solutions and/or slurries including the steps of

- (a) contacting a metal ion-containing solution with an ion exchange material comprising a water superabsorbent polyurethane foam having an ion exchange medium contained therein, wherein the foam includes a polyurethane that contains poly(oxyethylene) moieties having a molecular weight of 1,000-1,400;
 - (b) separating the ion exchange material from the solution and/or slurry; and
 - (C) recovering the sorbed metal ions from the ion exchange medium.
- 7. (Previously Presented) An ion exchange material according to claim 2 wherein the ion exchange medium is in the form of a bead, resin, fibre, foam, or liquid.
- 8. (Currently Amended) An ion exchange material according to claim 2 wherein the ion exchange medium is in liquid from and is imbibed into a solid sorbent for embedding into the superabsorbent polyurethane foam.
- 9. (Currently Amended) An ion exchange material according to claim 3 wherein the ion exchange medium is in liquid from and is imbibed into a solid sorbent for embedding into the superabsorbent polyurethane foam.
- 10. (Currently Amended) An ion exchange material according to claim 2 wherein the ion exchange medium is in the form of an emulsion or suspension for imbibing into the superabsorbent polyurethane.
- 11. (Currently Amended) An ion exchange material according to claim 3 wherein the ion exchange medium is in the form of an emulsion or suspension for imbibing into the superabsorbent polyurethane.

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12. (Currently Amended) An ion exchange material according to claim 4 wherein the ion exchange medium is in the form of an emulsion or suspension for imbibing into the superabsorbent polyurethane.

- 13. (New) A process for the extraction of metal anions and cations from aqueous solutions and/or slurries including the steps of:
- (a) contacting a metal ion-containing aqueous solution with an ion exchange material comprising a silicone surfactant free polyurethane foam having an ion exchange medium contained therein, wherein the material has been formed by reacting an isocyanate terminated prepolymer, which is based on poly(oxyethylene) glycol and isocyanate selected from TDI, MDI, MDI-based isocyanates and mixtures, with an excess of water in the presence of an ion-exchange medium in the form of a solid ion exchange polymer, an organic ion exchange liquid absorbed into a solid sorbent or a porous granule, or a water-based ion exchange polymer emulsion, and in the absence of a silicone surfactant to form the foam;
 - (b) separating the ion exchange material from the solution and/or slurry; and
 - (c) recovering the sorbed metal ions from the ion exchange medium.